REMARKS

Reconsideration of this Application is respectfully requested. Claims 1 and 8 have been amended herein. Claims 1, 6-8, 12, and 13 remain pending. Claims 2-5, 9-11, and 14-20 have been withdrawn without prejudice in response to a restriction requirement. Applicant asserts that the pending claims of the present Application are patentable over the cited art.

Response to Arguments

Paragraph 2 of the Response to Arguments section of the above referenced Office Action cites the mention of a redundant array of inexpensive drives (RAID) (e.g., Chisholm col. 4 lines 26-36) as teaching disk transaction preparation and disk transaction implementation as in the claimed invention. Applicant points out that a disk drive, disk drive array, disk controller, is not depicted in any of the figures of Chisholm. The cited section mentions that the entire computer system 100 of Chisholm can be "used as a server station having Fast Wide SCSI local interface controller with a Redundant Array of Inexpensive Drives (RAID) as storage devices." There is no disk controller depicted in the figures of Chisholm. Applicant points out that this citation does not mention a bypass register. No bypass register a shown in the figures of Chisholm. Additionally, the cited block 209 having the register 311 is described as a DMA controller on the other side of

the expansion bus 130, as opposed to being within the bridge component 111, and as recited in Claim 8.

Thus Applicant reiterates that the description of Chisholm are not directed at disk transactions or the preparation of disk transaction information. The description and the figures of Chisholm do not describe bypassing any ATA steps. The only mention of disk drives in Chisholm is SCSI, which is completely different in ATA, and this is only mentioned in passing. There is no discussion of ATA or disk I/O protocols found within Chisholm.

35 USC Section 102 rejections

Paragraphs 6 reject independent Claims 1 and 8 as being anticipated by Chisholm (U.S. Patent No. 5,968,143). Applicant respectfully traverses.

Claim 1 recites a disk controller for implementing efficient disk I/O for a computer system. The disk controller includes a bus interface for interfacing with a processor and a system memory of the computer system, a disk I/O engine coupled to the bus interface, and a device interface coupled to the disk I/O engine for interfacing the disk I/O engine with a disk drive. The disk I/O engine is configured to cause a start up of the disk drive upon receiving a disk start up command from the processor. Additionally, claim 1

has been amended to specifically recite the start up command being configured to hide a start latency of the disk drive. The disk I/O engine is further configured to execute a disk transaction by processing the disk transaction information from a bypass register coupled to the disk I/O engine.

Accordingly, Claim 1 now recites the disk I/O controller causes the startup of the disk drive upon receiving the command, enabling the disk controller to hide the start up latency of the disk drive (e.g., which can take 4 to 6 microseconds). Additionally, the disk I/O engine executes this transaction by processing this transaction information from a bypass register. A "bypass register" is defined by the specification of the present invention as being, for example, a register that " ... bypasses the prior art ATA step of writing to a set of 8-bit registers in the disk controller to implement a disk transaction" as described at page 17 line 12 of the present specification.

In contrast, as described in Response to Arguments section above, Applicant points out that Chisholm is directed towards a general computer system that includes a general-purpose DMA controller. The DMA controller of Chisholm is connected on the wrong side of the expansion bus, as opposed to being a bridge component (e.g., as recited in claim 8). Chisholm does not

appear to be directed to the transfer of data through hard drive protocols, disk controller communications procedures, or the like.

Applicant points out that the cited section of Chisholm (e.g., figure 3 reference number 203) relied upon to show a bypass register appears to be directed towards a general purpose local memory of a host memory controller 213. The cited section of Chisholm (e.g., column 5 lines 5 through 10) describes the host memory controller 213 transferring command/data blocks to and from a transfer controller 209. This appears to have nothing to do with disk transactions or the preparation of disk transaction information. This appears to have nothing to do with bypassing any ATA steps. Applicant finds no discussion of ATA or disk I/O protocols within Chisholm.

Applicant finds Chisholm to be directed towards the transfer of command blocks between a host processor and a local processor. Chisholm describes a system whereby a transfer signal is given to a command block transfer controller to start a command block transfer without a local processor unit intervention. Chisholm is relied upon to show the transferring of a command to a disk controller, wherein the command causes a start up of a disk drive coupled to the disk controller, as recited in Claim 1. As described above, Chisholm appears to be directed towards the transfer of command blocks between a host processor and a local processor. Chisholm

describes a system whereby a transfer signal is given to a command block transfer controller to start a command block transfer without a local processor unit intervention.

There is no description within Chisholm of the transfer of a command to cause the startup of a disk drive coupled to the disk controller, and the subsequent implementation of a disk I/O from the disk controller. There is no description within Chisholm of the start up latency of the disk drive. There is no description or disclosure within Chisholm of the benefits of issuing a command to start up a disk drive and subsequently packaging the data comprising the command for implementation of the disk drive I/O. There is no description within Chisholm of the need to hide disc start up latency. Thus, the issuance of a command to initiate a disk drive start up followed by the actual packaging and implementation of the disk drive I/O is in no way obvious and is not shown or suggested by Chisholm.

Accordingly, Applicant asserts that Chisholm does not anticipate the claimed invention within the meaning of 35 USC Section 102.

CONCLUSION

Applicant respectfully asserts that all remaining claims (e.g., Claims 1, 6-8, 12, and 13) are in condition for allowance and Applicant earnestly solicits such action from the Examiner. The Examiner is urged to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,
WAGNER, MURABITO & HAO

Dated: 12/13, 2006

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